AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method of making a tool for molding a part such that the tool has a channel formed therein to provide the flow of fluid for heating/cooling the molded part, the method comprising the steps of:

providing a plurality of tool sections in an unhardened state and having facing surfaces, each of a number of said tool sections having ~~at least one of~~ a groove formed in ~~a~~ the facing surface thereof ~~and a hole therethrough~~;

assembling said tool sections with facing surfaces thereof in facing relationship to form a tool block wherein said grooves ~~and holes~~ form at least one channel in said tool block, wherein said channel is formed with at least one inlet and outlet at outer edges ~~walls~~ of the facing surface of each tool section ~~sections~~ to provide the flow of fluid through said channel;

diffusion bonding said facing surfaces of said adjacent tool sections by pressing said tool sections together at an elevated temperature to form a tool block; and

machining said tool block to form a final tool shape.

2. (Original) A method as in claim 1, wherein said facing surfaces of said tool sections have complementary grooves therein and said tool sections are assembled with said complementary grooves in facing relationship to form said channel.

3. (Original) A method as in claim 2, wherein each said groove has a predetermined cross-sectional configuration that provides said channel with a predetermined cross-sectional configuration after said diffusion bonding step.

4. (Original) A method as in claim 2, wherein said tool includes at least three said tool sections, at least one of which has grooves in two opposing surfaces thereof.

5. (Original) A method as in claim 4, wherein said facing surfaces of said tool sections are planar and opposing surfaces of each said tool section are substantially parallel.

6. (Currently Amended) A method as in claim 2, wherein said tool includes at least one said groove in one said tool section in fluid communication with at least one ~~said~~ hole through an adjacent said tool section.

7. (Original) A method as in claim 1, further comprising the step of grinding and polishing said facing surfaces of said adjacent tool sections to a predetermined surface finish prior to said diffusion bonding step.

8. (Original) A method as in claim 7, wherein said predetermined surface finish is controlled to provide a bond between said tool sections that includes imperfections.

9. (Original) A method as in claim 8, wherein at least one of the composition of the ambient atmosphere, said pressure and temperature are controlled to provide a bond between said tool sections that includes imperfections for permitting nondestructive separation of said bonded tool sections.

10. (Original) A method as in claim 1, further comprising the step of cooling said diffusion bonded tool sections under conditions that leave said material in an annealed state that permits machining thereof.

11. (Original) A method as in claim 1, further comprising the steps of:

forming said tool sections so that they assume the shape of a tool when assembled; and

cooling or heating said diffusion bonded tool sections under conditions that leave said material in a hardened state.

12. (Currently Amended) A method of making a tool for molding a part such that the tool has a channel formed therein to provide the flow of fluid for heating/cooling the molded part, the method comprising the steps of:

cutting a body of tool material in an annealed state into layers with opposing facing surfaces;

forming in each of a number of said layers at least one of a groove in a facing surface thereof ~~and a hole therethrough~~;

assembling said layers in facing relationship so that said grooves ~~and holes~~ form at least one channel in said assembled layers wherein said channel is formed with at least one inlet and outlet at outer edges ~~walls~~ of the tool sections to provide the flow of fluid through said channel;

diffusion bonding facing surfaces of said adjacent layers by pressing said layers together at an elevated temperature to form a tool block; and

machining said tool block to form a final tool shape.

13. (Original) A method as in claim 12, further comprising the steps of:

cooling said diffusion bonded layers under conditions that leave said material in an annealed state that permits machining thereof;

machining said diffusion bonded layers to form a tool with a predetermined configuration relative to said channel; and

heat treating said machined tool to cause it to assume a hardened state.

14. (Original) A method as in claim 12, further comprising the steps of:

forming said layers so that they assume the shape of a tool when assembled; and

cooling said layers under conditions that leave said material in a hardened state.

15. (Original) A method as in one of claims 13 and 14, wherein said material is selected from the group comprising:

AISI Designation	Composition (weight %)	HRC
S7 chrome-moly shock resistant steel	C 0.5; Si 0.25; V 3.25; Mn 0.7; Mo 1.4	45-57
A2 air hardening tool steel	C 1.0; V 0.25; Si 0.60; Mo 1.1; Cr 5.25; Mn 0.6	57-62
M2 moly-tungsten high speed steel	C 0.83; Mo 5.0; W 6.35; Cr 4.15; V 1.9	60-65
W2 water hardening carbon tool steel	C 0.070 to 1.3	50-64
420 stainless steel	C 0.3- 0.4; Mn 1.0 max; P 0.03 max; S 0.03 max; Si 1.0 max; Cr 12.0 - 14.0	48-52
H-13 hot work steel	C 0.4; Si 1.0; V 1.05; Cr 5.25; Mo1.25; Mn 0.4	38-53
D2 high carbon/high chrome tool steel	C 1.55; Cr 12; Mo 0.08; V 0.09	54-61
D3 high carbon/high chrome tool steel	C 2.2; Cr 12; V 1.0	54-61

and a beryllium/copper alloy that is heat treatable and has an HRC value of 38-42, and titanium and titanium alloys, and metals from which oxides are removed from said facing surfaces and said surfaces are degreased and cleaned, and wherein HRC is the Rockwell-C hardness of the material in a hardened state.

16. (Original) A method as in claim 12, wherein said facing surfaces include indexing means for fixedly locating said surfaces relative to each other and said grooves are located precisely relative to said indexing means.

17. (Original) A method as in claim 16, wherein:

said indexing means comprises indexing holes formed in said block before cutting it into said layers;

said layers are cut so that each layer includes at least two indexing holes in said opposing surfaces; and

said layers are assembled by aligning said indexing holes and placing an indexing member therein.

18. - 30. (Cancelled)

31. (Currently Amended) A method of making a tool for molding a part, the method comprising the steps of:

providing a plurality of tool sections in an unhardened state and having facing surfaces, each of a number of said tool sections having a groove along a facing surface thereof;

assembling said tool sections with the facing surfaces thereof in facing relationship to form a tool block wherein said grooves form at least one channel in said tool block, wherein said channel is formed with at least one inlet and outlet at outer edges ~~walls~~ of the facing surface of each tool section ~~sections~~ to provide the flow of fluid through said channel along said surfaces; and

diffusion bonding said facing surfaces of said adjacent tool sections by pressing said tool sections together at an elevated temperature.

32. (Previously Presented) A method as in claim 1, wherein said channel is formed along said surfaces to provide the flow of fluid through said channel along said surfaces.

33. (Previously Presented) A method as in claim 12, wherein said channel is formed along said surfaces to provide the flow of fluid through said channel along said surfaces.